CHAP. III.

ON THE FORMATION OF CANALS, AND THE MODE OF EXTENDING THEM INTO EVERY DISTRICT.

HAVING in ſome degree exhibited the importance of canals, the next conſideration is to point out a mode of extending their advantages. In this it muſt be evident, that they can only be advantageouſly conſtructed through ſuch diſtricts, as produce a trade equal to an intereſt for the money advanced in their formation; and on this point the difficulty of extending canal communications ſeems to depend: public roads, bridges, harbours, docks, and other works, admit of a variation, and may be conſtructed great and magnificent, or contracted and cheap, in proportion to the trade, agriculture, or population of the country which they are to accommodate; but, according to the preſent ſyſtem[*] of conſtructing canals, there is a certain point to which they ſeem to deſcend[†], and below which they cannot be further contracted. The ſum required for their conſtruction therefore muſt be equal to the forming them of thoſe dimenſions; and the trade expected muſt be ſufficient to pay the intereſt of the ſum, or the country remain hopeleſs of the conveniencies of water carriage; unleſs a canal be executed in the frenzy of ſpeculation, which indeed is ſometimes the caſe; and rather injures than promotes ſuch works; for ſubſcribers being diſappointed of the intereſt with which they had flattered themſelves, are deterred from entering

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[*] By this I mean the prevailing ſyſtem; there are but two canals yet conſtructed on the inclined plane principle, that of Ketly, and the Shrophſhire.

[†] For navigating twenty-five or twenty ton boats.

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into ſimilar undertakings, though of more rational adventure. The ill ſucceſs alſo ſpreads like a contagion, and ſickens the ſoul of enterprize in others; yet the failure is perhaps not for want of materials to be conveyed by the canal, but in conſequence of the expence of getting at ſuch materials.

Had the ordinary engines of conveyance admitted of no diminution below broad-wheel waggons, thoſe waggons would, in every reſpect, increaſe the expence of roads, and the carriage of the various materials; and the country could not poſſibly be ſo commodiouſly ſupplied as by carts, or even cars. Or had that incomparable apparatus, the ſteam engine, been confined to a two-hundred horſe power, the innumerable advantages ariſing from proportioning its powers down to any degree, which fits it to every ſituation, could never have been experienced, and the engine itſelf would be of very little uſe.

A ſimilar power of proportioning a canal to the particular demand of carriage upon it, in like manner, would be attended with benefits which at preſent are not even thought of; but canals are the only things, which I can at preſent recollect, which ſeem to be fixed to a certain point; in this reſpect, conſequently, they are limited in their extenſion, imperfect in their principle, and incapable of effectually ſpreading the bleſſings of water communications by their preſent mode of conſtruction; to prove this aſſertion it is only neceſſary, for a moment, to conſider the operation of a lock.

On viewing the operation of locks, it appears that if they were conſtructed for ſmall boats, *ſuppoſe boats of four tons*, the delay in paſſing would be ſo great that an important trade could not be tranſacted, as it requires almoſt as much time to paſs a ſmall

as

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